



MB-4 MB-4E

MINI-BOUNDARY™ MICROPHONE



The Crown® MB-4 is a miniature boundary microphone for multi-miking applications such as teleconferencing, distance learning, boardrooms, courtrooms, and TV or theatrical applications. Double-sided sticky tape is provided for attaching the unit under shelves, on walls, etc.

Thanks to its supercardioid pickup pattern, the MB-4 greatly reduces ambient noise and pickup of room reverberation. The result is a clearer sound.

The MB-4 has a 15-foot attached cable leading to an XLR-type output connector with built-in mic electronics. It is powered by 12-48V phantom power, and is low-impedance balanced.

The MB-4E is the same, but without the electronics/connector.

The MB-4E must be used with the Crown MB-100 or MB-200 interface (not included). The interface provides these functions:

- Powers and equalizes up to four mics.
- Provides programmable switching to turn the mic on or off if desired (switches not provided).
- The MB-200 interface also has remote switch sensing via an optical coupler.
- Pluggable microphone inputs.
- Provides balanced outputs from the interface.

Features

- Tiny, inconspicuous.
- Can be used without putting holes in the table.
- Clean, clear, natural sound.
- Low-Z balanced output prevents hum and high-frequency loss.
- LED indicates mic on (MB-4E only).
- LED in MB-4E is defeatable.
- Switches can be internally programmed for touch-on/touch-off, momentary on, or momentary off.
- Remote sensing of switch closure (in MB-200 interface).
- Removable grille assembly can be painted.

How to Paint the Microphone

1. Using a small screwdriver, pry open one side of the grille, then the other side (Fig. 5).
2. Remove foam liner.
3. Wearing a dust mask, spray-paint the grille assembly. Be sure grille holes are not clogged.
4. Allow paint to completely dry.
5. Make sure the LED is properly aligned.
6. Carefully place the grille assembly over the LED, and snap in place.

Features

- Ideal for teleconferencing, distance learning, boardrooms and courtrooms
- Has a 15-foot attached cable leading to an XLR-type output connector with built-in mic electronics

- Half-supercardioid polar pattern reduces feedback, room acoustics and background noise

- Clear, natural sound

- Small and inconspicuous

Specifications

MB-4 specifications are at the mic cable connector. MB-4E specifications are at the interface output terminals.

Type: Phase Coherent Cardioid.

Element: Electret condenser.

Frequency response (typical): 50 Hz to 15,000 Hz at 30 degrees incidence to surface (see Fig. 1).

Polar pattern: Half-supercardioid (supercardioid in the hemisphere above the primary boundary). See Figs. 2 and 3.

Impedance: 150 ohms, balanced (recommended load impedance 1000 ohms or greater).

Open-circuit sensitivity (typical): 22 mV/Pa* (-33 dB re 1 volt/Pa).

Power sensitivity: -30.5 dB re 1 mW/Pa.* EIA rating -125 dBm.

Equivalent noise level (self-noise): 22 dB SPL typical (0 dB=0.0002 dyne/cm²), A-weighted.

S/N ratio: 72 dB at 94 dB SPL.

Maximum SPL: 120 dB SPL at 3% THD.

Polarity (MB-4): Positive (inward) pressure on the diaphragm produces positive voltage on pin 2 with respect to pin 3.

Polarity (MB-4E): Positive (inward) pressure on diaphragm produces positive voltage on interface output terminal 1 with respect to terminal 3, and on terminal 4 with respect to terminal 6.

Operating voltage (MB-4): Phantom power, 12-48 volts DC on pins 2 and 3 with respect to pin 1 of output connector.

Operating voltage (MB-4E): 18-48V phantom power at interface output.

Current drain (MB-4): 4 mA nominal.

Current drain (MB-4E): 4 mA nominal with LED off, 5 mA nominal with LED on.

Connector (MB-4): 3-pin pro audio, XLR-type.

Connector (MB-4E): Pluggable terminal block (one block per every two microphones).

Cable: Permanently attached, black, 15-foot (4.572-m), 2-conductor shielded cable from mic to power module or interface. No other cable supplied. Use two-conductor shielded mic cable from power module to mixer, or from MB-100 Interface to mixer.

Materials: High-impact molded plastic and steel mesh mic grille, steel power module.

Finish: Satin black.

Net weight: Microphone: 0.7 ounces (19.8 grams). Power module: 2.8 ounces (78.6 grams).

Dimensions: See Fig. 4.

Included accessories: Double-sided tape for fastening under shelves, etc., for theatrical applications.

Optional accessories (MB-4 only): PH-1A phantom power supply (1 channel, battery or DC-adaptor powered).

Required accessory (MB-4E only): Crown MB-100 or MB-200 Interface.

*1 pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL.

Fig. 1

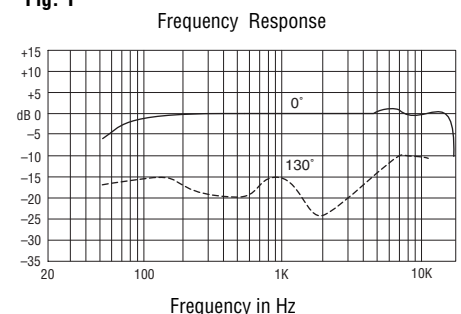
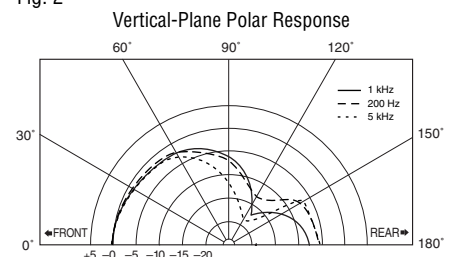


Fig. 2





INSTALLED

MB-4 MB-4E

Fig. 3
Horizontal-Plane Polar Response

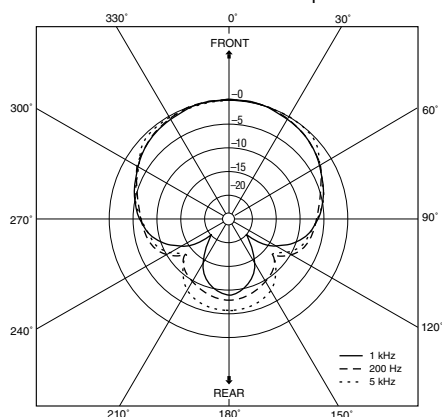


Fig. 4

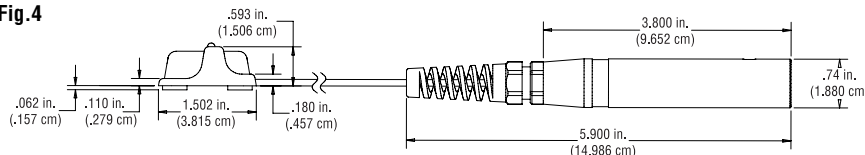
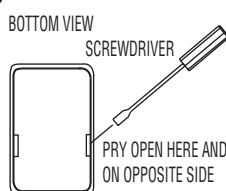


Fig. 5



Installation

1. Typical placement for each mic is at arm's length from the user. Install one microphone in front of each person, or one between every two people.

If the microphone will be used on a lectern, install it on an open surface. Do not install it in a cavity or recessed area as the frequency response and polar pattern will be degraded.

2. Orient the mic so the word "Crown" is readable by the user (right-side-up).

3. MB-4 only: Plug a mic cable with a female XLR-type connector into the power module. Connect the other end of the cable to a phantom power supply. Or if your mixer has phantom power, connect the mic cable directly to a mic input and turn on phantom power.

Wire the MB-4E to the MB-100 or MB-200 interface as described in the interface data sheet.

Architects' and Engineers' Specifications

The microphone shall be the Crown model MB-4, MB-4E, or equivalent. The microphone shall be a half-supercardioid electret condenser type. The microphone shall use the principle of phase coherency achieved by mounting a small-diameter element very near a boundary. This eliminates comb filtering in the audible spectrum.

The microphone will exhibit excellent off-axis response and gain-before-feedback. The MB-4 shall have a permanently attached 15-foot (4.572-m) cable connected to an XLR-type connector with built-in mic electronics. Powering shall be by 12-48V phantom power. The MB-4E shall have a permanently attached 15-foot (4.572-m) cable without electronics/connector. Its powering shall be by the Crown MB-100 or MB-200 Interface.

At the output connector, nominal sensitivity shall be 22 mV/Pa. Maximum SPL shall be 120 dB SPL for 3% THD. Equivalent noise shall be 22 dBA nominal. Frequency response shall be 50 Hz to 15 kHz with a uniform off-axis response, about 20 dB down at the rear nulls.

The Crown models MB-4 and MB-4E are specified.

Warranty

Crown professional microphones are guaranteed against malfunction for a period of three years from date of original purchase. See enclosed warranty sheet for additional information.

Service

If the microphone does not function properly, check that it is aimed correctly and is connected as described in this data sheet. If there is hum or no signal, first repair or replace the cable. For the MB-4E only, check the slide-switch setting in the MB-100 or MB-200 Interface. If the mic is defective, return the microphone and the interface in their original packaging to **Crown Factory Service, 1718 West Mishawaka Road, Elkhart, IN 46517-9439**. For further assistance or technical support call **800-342-6939**.



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